REMARKS

This Amendment is in response to the Office Action mailed June 3, 2005. The Office Action rejected claims 1, 6, 7, 9-10, 12, and 14-17 under 35 U.S.C. §102, and rejected claims 2-3, 4-5, 8, 11, and 13 under 35 U.S.C. §103.

Claims 1, 8, 9, 16 have been amended. Dependent claims 18 – 20 have been added. Claims 1-20 remain pending in the application. Reconsideration in light of the amendments and remarks made herein is respectfully requested.

Rejections Under 35 U.S.C. § 102(b)

The Office Action rejected claim 1, 6, and 16-17 under 35 U.S.C. 102(b) as being anticipated by Hsu et al. (U.S. Pat. No. 6,243,660) (herein "Hsu").

Applicants traverse this rejection in its entirety.

As to independent Claim 1, the Office Action states that Hsu teaches "a processing unit ... to receive the heading signal and the one or more motion signals, determine a position and orientation, and *automatically provide different navigation information depending on the orientation of the navigation device.*" The Office Action cites Col. 7, lines 1-23 of Hsu as teaching this limitation. However, the cited section of Hsu only teaches that a microprocessor is adapted by software to analyze, evaluate, and calculate various data. Hsu fails to teach the limitation of "automatically providing different navigation information depending on the orientation of the navigation device." This is because Hsu only teaches a generic digital compass with multiple sensing and reporting capabilities. It does not teach that the digital compass has knowledge of its own orientation (e.g., vertical versus horizontal orientations) and that it automatically provides different navigation information based on its orientation.

As to dependent claim 6, the Office Action states that Hsu Col. 4, lines 35-44, teaches "a communication port to transmit navigation information." Applicants submit that Hsu fails to teach this limitation. A close reading of Hsu, Col.4, lines 35-44, teaches a port for providing a power source for the multi-sensor compass. This is not a communication port to transmit navigation information as claimed.

As to dependent claim 16, the Office Action asserts that Hsu Cols. 3, lines 1-14 and 21-53, teaches "determining the orientation includes determining the orientation of a gravity vector." However, a close reading of the cited sections of Hsu teach that an inclinometer senses the tilt of a fixed axis of the compass with respect to the axis of gravitational attraction. As amended, claim 16 recites, "the processing unit determines direction of a gravity vector from the one or more motion signals generated by the one or more motion sensing devices." Thus, the gravity vector is determined from a plurality of motion sensing devices (e.g., accelerometers). By contrast, Hsu only teaches an inclinometer that measures a tilt relative to the axis of gravitational attraction. There is no mention in Hsu of how the gravitational attraction is determined. It certainly does not teach the using multiple motion sensing devices as claimed. Thus, Hsu fails to teach this limitation.

As to dependent claim 17, the Office Action asserts that Hsu Cols. 4-5, lines 45-3, teaches "a detector to detect when the navigation device is inserted in a holster." However, a close reading of the cited sections of Hsu teach only a lid 17 to cover the compass 9 face. No holster or holster detector is taught by Hsu as claimed. Thus, Hsu fails to teach this limitation.

Rejections Under 35 U.S.C. § 102(e)

The Office Action rejected claim 7 and 12 under 35 U.S.C. 102(e) as being anticipated by Soehren et al. (U.S. Pat. No. 6,522,266) (herein "Soehren").

As to claims 7 and 12, the Office Action states that Soehren discloses (1) "calculating a dead reckoning position if the navigation device is affixed to the user;" (2) "providing azimuth heading and dead reckoning position if the navigation device is affixed to the user;" and (3) "providing azimuth heading otherwise."

While the cited sections of Soehren (Col. 14, lines 22-45; Cols. 14-15, lines 37-45) teach detecting and classifying various motions and headings, it does not teach the claimed limitations. In particular, Soehren does not teach "calculating a dead reckoning position and providing azimuth heading and dead reckoning position if the navigation device is affixed to the user." The present claimed invention claims a navigation device that determines whether it is affixed to a user or not and, based on such determination, provides different navigation information. The distinction between a navigation device being affixed to the user and not affixed to the user is not made by Soehren.

For the foregoing reasons, Applicants contend that the Soehren fails to anticipate the invention as claimed. Accordingly, Applicants respectfully request the withdrawal of the 35 U.S.C. § 102(e) rejections of claims 7 and 12.

The Office Action also rejected claim 9-10 and 14-15 under 35 U.S.C. 102(e) as being anticipated by Reilly et al. (U.S. Pat. No. 6,366,855) (herein "Reilly").

As to independent claim 9, the Office Action states that Reilly discloses (1) "automatically selecting a first motion measurement algorithm if the navigation device is in a first orientation;" (2) "automatically selecting a second motion measurement algorithm if the

navigation device is in a second orientation;" and (3) "providing a position according to the pedometry algorithm selected."

While the cited sections of Reilly (Cols. 6-7, lines 28-21; Cols. 7-8, lines 21-29; and Cols. 8-9, lines 30-12) teach various different embodiments for determining terrain navigation information, none of these embodiments teach the claimed limitation of automatically selecting between two motion algorithms based on the orientation of the navigation device. That is, Reilly teaches various algorithms for calculating navigation information but not the automatic orientation detection of the navigation device itself and selection between algorithms based on this orientation as claimed.

As to dependent claim 10, while the cited section of Reilly (Col. 5, lines 9-28) teach measuring horizontal and vertical velocity, it does not teach that the orientation of the navigation device is determined relative to a horizontal plane. That is, as the navigation device is moved, its orientation is determined based on a predefined horizontal plane. Reilly simply does not teach determining any orientations of navigation device.

For the foregoing reasons, Applicants contend that the Reilly fails to anticipate the invention as claimed. Accordingly, Applicants respectfully request the withdrawal of the 35 U.S.C. § 102(e) rejections of claims 9-10 and 14-15.

Rejections Under 35 U.S.C. § 103

The Office Action rejected claims 2-3 under 35 U.S.C. 103(a) as being unpatentable over Hsu et al. (U.S. Pat. No. 6,243,660) in view of Kubo et al. (US 2002/0089425) (herein "Kubo").

As to claim 2, the Office Action states that "[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach[ing] of Hsu et al. by combining provide different navigation information depending on whether the navigation

device is affixed to a user or not for accurately determine a user heading and position information." (Page 4, Office Action).

Applicants submit that Kubo fails to teach the claimed limitation for which it is asserted. In particular, Kubo does not teach "[providing] different navigation information depending on whether the navigation device is affixed to a user or not." The Office Action relies on Paragraphs [0004] through [0007] of Kubo as teaching this limitation. However, a close reading of the cited sections of Kubo does not disclose that different navigation information is provided by the navigation device depending on its orientation. Instead, Kubo appears to detect the orientation of the motion detector itself as a means to reorient its reference axis, not to automatically provide the user with different navigation information as claimed. (See Para. [0058] through [0074]). It appears that Kubo determines the orientation of the motion detector for the sole purpose of reorienting is axis so that it can properly provide the same heading information. Kubo does not use the device orientation for providing different navigation information as claimed.

The Office Action rejected claims 4-5 under 35 U.S.C. 103(a) as being unpatentable over Hsu et al. (U.S. Pat. No. 6,243,660) in view of Reilly et al. (U.S. Pat. No. 6,366,855) (herein "Reilly").

As to claim 4, Applicants have noted above that both Hsu and Reilly fail to disclose automatically switching between different modes of operation based solely on the orientation of the navigation device. The cited section in Reilly (Cols. 6-7, lines 28-21) teach various different embodiments for calculating navigation information but it does not teach the claimed limitation of automatically switching modes of operation based on device orientation.

As to claim 5, the cited sections in Hsu and Reilly also fail to disclose the use of different algorithms and navigation outputs as claimed. In particular, Reilly does not teach the three modes of operation depending on the device orientation and position as claimed. That is, a first mode of operation (algorithm) if the navigation device is affixed to a user and the device is in a primary orientation, a second mode of operation (algorithm) if the navigation device is affixed to a user and the device is in a secondary orientation, and a third mode of operation if the navigation device is hand-held. Reilly simply fails to teach the claimed auto-detection of the device orientation and switching between modes of operation as claimed.

Additionally, Applicants submit that the device in Reilly distinct from the claimed navigation device. Unlike the present invention, which uses internal sensors to provide such information, Reilly teaches a device with external sensors 4 and 59 to determine the position, velocity and heading of a person wearing the device. (Cols 8-9, 30-12) Thus Reilly requires these external sensors to determine the type of ambulation of the user. This is distinct from the present invention which claims one or more motion sensing devices as part of the navigation device. Moreover, nothing in Hsu or Reilly teaches if and how they can be combined to operate with only internal motion sensors. Thus, Applicants submit that the cited prior art fails to teach the invention as claimed.

The Office Action also rejected claims 8, 11, and 13 under 35 U.S.C. 103(a) as being unpatentable over Soehren et al. (U.S. Pat. No. 6,522,266) in view of Reilly et al. (U.S. Pat. No. 6,366,855) (herein "Reilly").

Applicants submit that, as discussed above, Soehren and Reilly fail to teach the claimed limitations of claims 8, 11, and 13. For instance, while Soehren discloses various algorithms in separate embodiments of their system, it does not disclose the automatic selection between two

algorithms based on navigation device position (e.g., affixed to the user or not) or orientation (e.g., vertical versus horizontal.).

For at least the reasons discussed above, Applicants submit that the invention recited in claims 2-3, 4-5, 8, 11, and 13 are patentably distinguishable over the cited prior art. Applicants respectfully request that the 35 U.S.C. § 103 rejections be withdrawn.

Should the Examiner maintain any of the above rejections, Applicants respectfully request that the noted limitations be identified in the cited references with sufficient specificity to allow Applicants to evaluate the merits of such rejections.

Conclusion

In view of the amendments and remarks made above, it is respectfully submitted that the pending claims are in condition for allowance, and such action is respectfully solicited.

Authorization is hereby given to charge our Deposit Account No. 19-2090 for any charges that may be due. Furthermore, if an extension is required, then Applicants hereby request such an extension.

Respectfully submitted,

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I hereby certify that this document is being deposited on August 31, 2005 with the U.S. Postal Service as first class mail under 37 C.F.R. 1.8 and is addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313

By: Jennifer Hargis

Signature

Dated: August 31, 2005